

XLIX.—*Observations on the Natural History of the Malayan Peninsula.* By Capt. P. J. BEGBIE, Madras Artillery. Communicated by H. E. STRICKLAND, Esq.

DURING a recent exploration of the richly-furnished shelves of the Radcliffe Library at Oxford, I met with a small volume entitled 'The Malayan Peninsula, embracing the History, Manners and Customs of the Inhabitants, Politics, Natural History, &c.,' by Capt. P. J. Begbie; printed at the Vepery Mission Press, 1834. As this volume is almost, if not entirely, unknown to British naturalists, and as the zoological observations appear to be made by a careful and original observer, they may perhaps be interesting to the readers of the 'Annals', notwithstanding occasional inaccuracies in the scientific nomenclature.—H. E. S.

*Begbie's Malayan Peninsula*, p. 497 et seq.

The first species of the Ape tribe which is to be found in the peninsula is the *Troglodytes niger* of M. Desmarest\*, and the *Simia troglodytes* of Linnæus†, better known to English readers as the Chimpansé.

This animal presents a striking similarity in external conformation to the human figure. It stands about three feet high; and is covered profusely with long black hair, that on the hind head and shoulders being considerably longer than the rest. The head rounded and skin of the face dark. The facial angle, or that formed by a line drawn from the forehead to the muzzle, and another from the muzzle to the bottom of the ear, is 50°. The Chimpansé is destitute of a tail, cheek-pouches, and intermaxillary bones. The haunches are naked, but not callous. The arms reach nearly to the knees, so as to be nearly proportioned to the legs when the animal goes on all-fours. The hair on the fore-arm is reversed, pointing to the elbows instead of to the wrist. The hands and legs from the wrists and ankles are covered with light brown hair, the terminal line of the black hair being well-defined, so as to give an appearance of white gloves and stockings. The face is encircled with a white beard.

The Chimpansé is capable of receiving a considerable degree of education, and can make use of a stick to assist its steps. It is met with in troops of about 100 each, in various parts of the Malayan archipelago: those in the peninsula generally delight in the deep woods which clothe the sides of the various ranges of hills, and are extremely shy and difficult of access. It is very rarely that they are taken alive,—a circumstance perhaps to be

\* Stark's Elements of Natural History, vol. i. p. 41.

† Turton's System of Nature, vol. i. p. 10.

attributed to the timidity of the natives, who prefer the certainty of the gun to the hazard of a struggle in which they might be overcome by strength and number.

*P. Satyrus*, Desm. (synonyms: *Simia satyrus*, Linn.; *Pongo Wurmbii*, Desm.), generally known as the great Orang-Outang\*.

The canine teeth in this species project somewhat more than they do in mankind, and the tubercles on the molars are considerably more developed. The head is rounded, but more inclining to the oval than in the Chimpanse; the facial angle is about  $65^{\circ}$ . Like the last, it has no tail, cheek-pouches, nor callosities on the buttocks. The ears, except in being destitute of the lower lobe, resemble those of man. The arms are disproportionably long; so much so, that when the animal is erect, it can touch the ground with its hands.

Mr. Stark†, in treating of this animal, has the following passage:—"The history of this animal, confounded with relations of other species, has hitherto been involved in much obscurity. The animal described by naturalists under the name of *S. satyrus*, specimens of which have occasionally been seen in Europe, and the Pongo of Wurmb, seem only, as Cuvier conjectured, to be the young of the gigantic animal described and partly figured by Dr. Clarke Abel. From the measurement of the shrivelled and dried skin, that gentleman makes its height to exceed seven feet and a half, though the youth of the animal was ascertained by the state of its teeth, and by the apophysis of the bones of its hands and feet being incompletely ossified."

After this opinion of two eminent naturalists, it may appear to savour somewhat of presumption to come to a different conclusion; but I offer with diffidence the following grounds on which I conceive the Pongo of Wurmb, or the third variety of the *Simia Satyrus* of Linnæus, to be, as there classed, distinct from the great Orang Utan.

The fur of the great Orang Utan is brownish red—that of the Pongo of the Malayan peninsula is a very pale nankeen. The beard of the former is chestnut—that of the latter nearly white. The hair of the head of the Orang Utan is reddish brown—that of the Pongo is of the same pale colour as the body. But the principal fact on which I rest is the height. It is supposed by these authors that the Pongo of three feet high is but the young Orang Utan. Now the Pongo in my possession was killed with a young one in her arms, which she was suckling,—a decisive proof of maturity, and yet she is barely three feet high. I have seen several others, some smaller, but none taller than this.

\* Corrupted from the Malayese: *Orang*, a man, and *Utan*, wild, from the resemblance to a human being.

† Stark's Elements of Natural History, vol. i. p. 42.

Further, the Malays assert, although I am not prepared to state with what truth, that there is seldom more than one Pongo to be found amongst a troop of Chimpanzés, over whom it rules with despotic authority, and that consequently it is very difficult to get near enough to shoot one, as the alarm is generally given by some of its subjects on the approach of the sportsman. If this exercise of authority have any foundation in fact, it tends to confirm the opinion of the animal being in full vigour.

I would therefore subdivide this tribe into the two following, viz. :

1st. *Pithecus satyrus*, Desm. (synonym, *Simia satyrus*, 2. Linn.) The great Orang Utan.

2nd. *Pongo Wurmbii*, Desm. (synonym, *Simia satyrus*, 3. Linn.) The lesser Orang Utan or Pongo.

*Pithecus lar*, Desm. (syn. *Simia lar*, Linn.) The Gibbon, or Long-armed Ape. The fur of this species is black, and the face surrounded with a ruff of gray hairs, causing the countenance to assume the appearance of extreme age and decrepitude. When the animal is erect the arms nearly touch the ground. Height about sixteen inches. Callosities on the buttocks.

This animal is extremely common in the forests of the Malayan peninsula, which re-echo with their plaintive whooping, as the boughs bend under the successive springs of the retreating troops scared by the unwonted sound of the traveller's footsteps. In confinement it is mild and melancholy, deprecating ill-treatment in a most beseeching manner, but never attempting to revenge it.

A smaller variety of the Gibbon is also to be met with in Malacca, termed by Desmarest *Pithecus variegatus*, corresponding with the *Simia lar* var. of Linn. This is a third less than the one just described, and its fur is variegated with gray-brown and dark gray.

*P. syndactylus*, Desm. (syn. *Simia syndactyla*, Raffles. *Siamang*, Malayese). The Siamang. The fur is very woolly, and of a deep black colour. Throat naked. The thumb and fore-finger of the posterior hand united at the second joint, whence its name.

This species of Gibbon is found in large troops, which are each governed by a chief. In the cool of the morning and evening they utter hideous outcries, but are perfectly silent during the heat of the day. They drink by immersing the hand in water, and then sucking the moisture from their fingers. They are easily tamed, but their timidity can never be wholly overcome, even by the most continued kind treatment.

*P. agilis*, Desm. (syn. *Hylobates agilis*, F. Cuvier). The Active Gibbon. Fur brown, back yellow, and forehead extremely low; face of the male bluish black, of the female brown.

These differ from the preceding in their habits, being found in couples instead of in troops. They are remarkably active in their movements, but not distinguished by much intelligence.

I pass over the three next *genera*, as, although I have no doubt that several species in these families, which are common in Sumatra and Java, are to be found in the peninsula, they have not passed under my own observation.

*Macacus*, properly so called. Tail more or less long.

*M. Sinicus*, Desm. (syn. *Simia Sinica*, Linn.) Chinese Monkey. Tailed, beardless. Fore-top horizontal, and diverging from the centre of the head to the circumference, giving it the appearance of a mandarin's cap.

This monkey is about the size of a cat, the tail considerably longer than the body. The fur reddish brown, mixed with pale yellow on the back. Is extremely active, and appears to delight in frequenting the banks of rivers.

*M. nemestrinus* (syn. *Simia nemestrina*, Linn.). The Brown Baboon. Beard thin, eyes hazel, haunches naked; tail short and slender, reaching only to the middle of the thigh.

The colour of the fur is gray, deepening into brown on the back; dorsal line and middle of the head black. The face naked and tawny; nose flat and lips thin. About two feet high. The brown baboon is extremely ugly, but intelligent, lively, and tractable, and susceptible of a considerable degree of instruction, easily learning to perform a variety of tricks. It is very abundant in the peninsula.

The Lemurs in their form approach to that of the quadrupeds, but the shape of the hands and head is somewhat similar to that of the preceding family of the *Quadrumana*, between whom and the quadrupeds nature appears to have designed them to be, as it were, a connecting link; most of them are nocturnal in their habits, from which circumstance and their disgusting appearance Linnæus designated them *Lemures*, or ghosts.

There are seven tribes of them, but only one that I am aware of is to be found in the Malayan peninsula, viz. the *Nycticebus*, Geoff. (syn. *Lemur*, Linn.; *Loris*, Cuv.)

*N. Javanicus*, Geoff., Desm. Javanese Lory. The animals of this *genus* have a long body with a very short tail; the eyes are very large, prominent, bright, and directed forward. The limbs appear weak, and the animal "drags its slow length along" as if it were pain to move. The species under description is about a foot long; the fur red, with a deeper-coloured dorsal line. It utters a low melancholy cry when teazed, and has a mournful expression of countenance.

*Galeopithecus*, Geoff., Pall., Desm. (syn. *Lemur*, Gmelin).

The *Galeopithecus* belong to the Cheiropterous order, and are

distinguished in common with the other families by having their form adapted for flight, a strong expansile membrane running from the throat to the fore-feet, thence to the hind-feet, and from them to the tail.

Mr. Stark says\*, that "the *Galeopithecii* are but imperfectly known;" and again, "that the largest species known is not bigger than a young cat." He enumerates but three species, viz. *G. rufus*, which he classes with the *Lemur volans*, or flying macaoco of Linnæus; the *G. variegatus*, supposed by some naturalists to be but a variety of the preceding; and the *G. ternatensis*. I am inclined to think that either the *Lemur volans* of Linnæus is a distinct species, or else that the specimen from the Pellew islands, which this author states to be about a foot long, must have been a young one, as the animals of this nature in the Malayan peninsula are fully three feet long, and thus agree with the Linnæan *Lemur volans*, and measure the same across when the membrane is expanded.

The *Galeopithecus rufus* is of a dusky red; but the fur of the species now under consideration consists chiefly of brown, interspersed with soft and hoary, or grayish-coloured hairs, which are also sprinkled on the upper surface of the membrane. The inside of the latter is fibrous and nearly naked. The tail long, slender, and hairy. Toes five on each foot, armed with acute, crooked, and slender claws. Head long, fox-shaped; mouth and teeth small; ears rounded, small and membranaceous; mammæ two, pectoral.

Nocturnal in its habits, it is seldom seen before sunset, when it springs from tree to tree in search of its food, which consists of insects and small birds. When the animal makes these leaps, it expands the membrane in order to support the body by the resistance of the air: it always alights however lower than the place it started from, owing to the insufficiency of this resistance to thoroughly buoy up the weight of its body; and it would, at the termination of a few successive leaps, find itself on the ground, were it not every now and then to run up the trunk on which it alights. The one which fell into my possession in 1832 had a young one clinging to the breast, and, owing to this incumbrance and the closeness of the pursuit, which deprived her of the opportunity of climbing, was speedily a prisoner. Both she and her young one however made a vigorous resistance, emitting sharp and unpleasant cries at the same time, and were not easily secured even with the assistance of two or three Europeans.

*Pteropus Javanicus*, Desm., Leschenault (syn. *Vespertilio vampyrus*, var. 3. Linn.). The Javanese Bat, *Kulowang* in Ma-

\* Elements of Natural History, vol. i. p. 65.

layese. This is the largest of the Bat *genus*, the body measuring from nine inches to a foot in length, and the spread of the wings being fully five feet. It is destitute of a tail. The upper part of the neck is of a dusky red hue, and the remainder of the fur black, intermingled with a few white hairs. It is gregarious, and may be seen hanging in clusters from the extremities of the boughs of a tree in most parts of the peninsula. They fly very high and evenly, quitting their retreats about an hour before sunset, and winging their way in an easterly direction, far above the tops of the loftiest trees. About an hour after sunrise they return in the same manner to their nocturnal retreat, and apparently accomplish at least four or five miles each trip without halting; a flock of them migrating thus regularly every evening from Sebang to Taboo, whence they returned the following morning. From the extreme height at which they soar, they are inaccessible by small shot; and the only one that I ever saw killed was shot at Bell's Stockade, in December 1832, by an officer of the 23rd Madras light infantry with a single ball. As it was shot through the heart, it fell perpendicularly; but the distance between the sportsman and the spot where it impinged was a hundred measured yards, so that, taking its extreme height into consideration, it could have been little less than double that range from the sportsman.

*P. rostratus*, Horsfield, Desm. The Dog-Bat of Java. Fur pale brown. Body three inches. Spread of the wings eleven inches.

*Cephalotes Pallasii*, Geoff., Desm. (syn. *Vespertilio cephalotes*, Linn.) The Malacca Bat. Three and a half inches long; spread of the wings fourteen inches. Fur above cinereous, beneath whitish.

Besides the foregoing, there are several species of bats; but as their habits present nothing peculiar, I pass on to the consideration of the *Erinaceus Malaccensis*, Linn., Desm. (syn. *Hystrix brachyura*, Linn.) The Malacca Hedgehog.

This animal is about eight inches long, and is armed with very long spines pointing parallel to each other. From it is procured the bezoar, known by the name of *Piedra del porco*.

*Ursus malayanus*, Raffles. The Malay Bear. This species is covered with smooth black fur, having a heart-shaped patch of yellowish white on the throat. It is very abundant amongst the low ranges of wooded hills in the peninsula, a great number of which have been called by the Malays *Bukit Bruan*, or Bears' Hill, in consequence of their resorting thither. It is singular that the *Bruan* of the Malays should so closely assimilate in sound with our term Bruin. They are savage and not to be trusted.

*Mustela nudipes*. The Java Ferret. This animal is about eleven inches long, and its fur is a brilliant golden yellow, with the exception of the forehead and tip of the tail, which are yellowish white. The soles of the feet are naked, whence its name.

*Mephitis javanensis*, Desm. (syn. *Telagon*, F. Cuv.) The Javan Mephitic Weasel. The whole of this tribe derive their defence from the power of ejecting an intolerably foetid liquid from their body. Body about sixteen inches long. Fur deep brown; forehead with a white spot, extended into a dorsal line. Tail very short, and covered with long hair. The *Lutra leptonyx* of Dr. Horsfield is also an inhabitant of the peninsula, and appears to be either the *Viverra cafra* of Linnæus, or closely allied to it.

*Viverra musanga*, Raffles. The Musang. Fur variegated with ash-colour and black; faint black stripes on the back. Head, feet and tail black, point of the muzzle white. Stands about the height of a cat, but the body is considerably longer. Fierce and untameable. Emits a strong and sickening smell of musk, especially when irritated, and is very destructive to poultry.

*Felis tigris*. The Tiger. This animal is too well known to require any description. It is abundant in the peninsula, but appears to be somewhat less bold than it is in the more arid climate of India.

*Felis melas*, Peron and Lesueur (syn. *Melas*, Cuv.). Spotted Black Tiger. Fur dusky black, spotted with deeper black. Eyes silvery gray, nearly white. About two feet and a half high. This is one of the most ferocious of the species, and very much dreaded by the Malays. Providentially it is comparatively rare, only one, a cub, having been brought into Malacca in the course of three years. Although not much larger than a common cat, he was so exceedingly savage, that after having had him in my possession for a few days, I was obliged to have him strangled.

*Felis javanensis*, Cuv., Desm. Javan Tiger-Cat. Fur silvery gray, or gray-brown above, beneath white. Four rows of elongated spots along the sides. Head streaked longitudinally with brown and white; white lunule at the base of each ear. Tail and legs darker than the body. The former shortish, straight, obtuse. Size of the common cat, and resembles in most particulars the *Felis bengalensis*. Fierce.

*Sciurus bicolor*, Desm., Gmel. The Java Squirrel. Fur above deep brown or blackish; below clear fawn-colour, with a white longitudinal stripe dividing the two colours. Eyes encircled with black. Ears not pencilled. About a foot long. Tail the same, distichous. This is a beautiful species of squirrel, but the one which I had in my possession resisted every attempt to tame it.

*Sciurus badjing*, Gmel. (syn. *Sciurus flavus*, Penn.) The Plantain Squirrel. Colour throughout pale yellow. Size the same as the last; gentle and easy tamed. This species is considered by Mr. Stark not to be well established, and he therefore merely mentions the name without including it in his classification. As however I procured a live specimen in the interior of the peninsula, and kept it for some weeks, I have restored it to its proper place in the catalogue.

Besides the above, there are three or four varieties of flying squirrels, viz. the *Pteromys petaurista* of Desm., or *Sciurus petaurista* of Gmelin and Pallas, about seventeen inches long; the *P. nitidus* of Desm., which is a slight variety of the preceding; the *P. sagitta* of the same author, or *Sciurus sagitta* of Gmelin; the Javan flying squirrel, six inches long, &c.

*Mus javanus*, Desm. (syn. *Mus pilorides*, Linn.) The Musk Cavy. Body above tawny, beneath white. Tail long, scaly, truncate. Nine inches long, tail four inches. The cavy grunts something like a hog, and from the looseness and toughness of its skin, and the length of its fore-teeth, which are cuneiform, makes a vigorous resistance when attacked by even three or four dogs. These teeth are about an inch long, and fully as much is imbedded in the jaw. When removed from the socket, the shape of the tooth is about a third of a circle. They are harmless and inoffensive, living principally upon the bamboo, which they cut down with great rapidity, and are known to the Malays by a name signifying Bamboo Rat.

*Manis crassicaudata*, Geoff. (syn. *M. macroura*, Desm.; *M. pentadactyla*, Linn.) Short-tailed Manis. This animal is about two feet long, and has the body covered with imbricate triangular scales; those on the back form eleven longitudinal and parallel rows. The tail shorter than the body. The manis erects its scales when irritated, and defends itself when attacked by rolling up its body into the form of a ball, presenting a defence on every side by means of its pointed scales.

The *Manis javanicus* of Desm. differs principally from the foregoing in being only two-thirds of the size, and having seventeen rows of longitudinal scales on the back.

*Elephas indicus* (syn. *Elephas maximus*, Linn.). The Asiatic Elephant. This animal inhabits the forests of the Malayan peninsula in considerable numbers.

*Sus babyrussia*, Linn. The Wild Hog. The name of this species is derived from two Malay words, viz. *babi*, hog, and *rusa*, wild. It is very abundant throughout the peninsula; but its tusks are smaller, and its disposition less ferocious, than those of the wild hog of continental India. It can be shot on foot with



little or no danger, hunting being totally impracticable from the nature of the country, and its flesh is remarkably tender and delicious.

The *Rhinoceros sumatrensis*, or Sumatran Rhinoceros, is also an inhabitant of the peninsula.

*Tapirus malayanus*, Raffles. The Malayan Tapir is to be found in the interior, but it is a very scarce animal. The nose of this singular quadruped is elongated into a moveable proboscis, which, unlike that of the elephant, is unfurnished with a digital process. The fur is black, with a broad white patch on the posterior part. The tapir is gentle and easily tamed. Sleeps during the day, and feeds at night on water-melons, gourds, pasture, &c.

Neither the horse nor the ass are indigenous to the peninsula, and those of the former to be met with are either Java or Achin ponies imported annually for the use of the wealthier class of inhabitants.

Of the Deer species there is the *Moschus javanicus* of M. Desmarest, or the *Kantchil*, which is a beautiful little animal, not larger than a rabbit, and having legs about the thickness of a tobacco-pipe. The fur is a deep red-brown on the back and white on the belly; three white streaks under the throat. It is very abundant, and the flesh strongly resembles that of a rabbit.

The *Cervus muntjac* of M. Desmarest is also an inhabitant of the peninsula.

Neither goats nor sheep, although both have been introduced, can be said to be indigenous to the soil, nor do the latter thrive as well in this part of the world as they do in continental India.

*Bos arnee*, Shaw. The Buffalo, *Karbau* in Malayese. Great numbers of buffaloes are domesticated in the peninsula, but I have never met with any wild ones. They are not nearly so savage as those of the Burman empire.

This is the most useful animal possessed by the Malays, and is employed by them for every purpose of draught and agriculture. The young afford them a very good substitute for beef, and the flock is maintained at a very little expense. From the extreme harshness and dryness of the skin, the buffalo suffers much during the heat of the day, and is consequently hardly ever worked at that time, but allowed to luxuriate, immersed all but the head, in a stagnant pool. It is extremely sluggish, not moving much above a mile an hour.

The domestic ox is unknown as an original inhabitant of the Malayan peninsula. A few bullocks and cows have been introduced, but they do not thrive very well on the main. Those on the island of Pinang appear to fatten better. Having in the few foregoing pages given a summary of the mammalia of the Straits, as far as they have passed under my own observation, I

now come to the consideration of the ornithological department.

It would swell these pages to an extent greater than it is contemplated, were I to detail at length the whole of the varied ornithology of the peninsula; I shall therefore content myself with a simple enumeration of this department, dwelling only on the more remarkable specimens.

Amongst the Eagle tribe, we find the *Falco severus*, Horsfield, Javan Falcon. This bird is about twelve inches long. The body is ash-brown, spotted and waved with darker and black. Greater wing-coverts varied with black, brown and pale brown. Arrow-spot on the throat white, outer quill-feathers barred, and outer tail-feathers tipped with white. Middle claw serrate.

*Falco malayensis*, Tem. Malayan Eagle. Plumage sooty brown. Irregular whitish bands at the base of the wing-feathers, and white lunules on the inside of the tail-feathers.

The Hornbill tribe, to which we now come, is one of the most curious of nature's wonders, and no less than five species are procurable in the peninsula. The first of these is

The *Buceros rhinoceros* of Linn., or the Rhinoceros Hornbill. It is about the size of a hen turkey, but slenderer in the body, and the plumage is totally black, with the exception of the tail, which is tipped with white. The bill is ten inches long, surmounted with a hollow protuberance eight inches long, and curved backwards.

What the precise use of this appendage is I am unable to say, but I think it not improbable that a communication exists between it and the *larynx*, producing the shrill and grating cry uttered by the bird, which is heard when it is soaring even at a great height. The hornbills build on the tops of the loftiest trees and are extremely shy, seldom permitting the sportsman to approach within range. When taken alive, they make a strenuous resistance with their long and powerful wings. The other species are, the *Buceros monoceros*, Shaw (syn. *B. malabaricus*, Lath.), the unicorn hornbill; the *Buc. galeatus*, Lath., the galeated or helmeted hornbill; and the other two I conceive to be new species, and shall therefore describe them.

The first of these I shall term *Buceros rugosus*, or the Wrinkled Hornbill\*. This species is two feet and a half long. Body, wings and tail black, with the exception of the cheeks, shoulders and throat, which are dirty white mixed with cinereous. One-third of the tail from the tip smoky white; helmet and pouch-like protuberance under the throat crimson, the former furrowed with three deep indentations. Upper mandible yellowish brown,

\* This is evidently the *Buceros corrugatus* of Temminck, Pl. Col. 531.—H. E. S.

inclining to white at the tip, and chipped at the edges; the base half of the lower mandible ochraceous and transversely caniculate; remainder of the mandible dirty white.

The second new species which I have ventured to nomenclate is the *Buceros lugubris*, or Melancholy Hornbill. This species is two feet long, having the bill very much hooked, destitute of a helmet, and reddish yellow. Head, neck, throat, belly and vent white, slightly sprinkled with black. Body, wings and tail black, the latter tipped with white. This bird is melancholy in its disposition, but withal voracious in its habits. I had one in confinement for some time, feeding it principally on plantains, which it devoured greedily, and never attempted to escape from its perch. I destroyed it on account of the filth and stench which it generated\*.

Amongst the Pheasant tribe, Malacca boasts of the *Argus giganticus* of Temm., or the *Phasianus argus* of Linn., the Argus pheasant, so justly celebrated for its superb plumage. Including the two long tail-feathers, the male measures five feet three inches in length. The secondary quill-feathers are brilliant with ocellate spots (whence the name of Argus is given to the bird), and are manufactured into fans by the Chinese. Like the rest of the pheasant tribe, it is a remarkably shy bird.

There are also the *Phasianus ignitus*, or fire-backed pheasant, which is a very handsome bird, about the size of a barn-door fowl, and the *Phasianus nycthemerus*, or pencilled pheasant. This last is however a very rare bird. The *Cryptonyx coronatus* of Temm., or the Malacca partridge, is a very handsome bird, having a chestnut crest on the occiput, the body being generally of a dark violet colour, and the back and rump of a dark shining green. Its flesh resembles that of the European partridge in flavour, and the bird can be kept in confinement. The *Coturnix textilis*, or common Indian quail; the Chinese quail, the *Charadrius pluvialis*, Linn., or golden plover; the *Charadrius hiaticula*, Linn., or ringed plover; the *Arenaria vulgaris*, or common sand-lark; *Gallinago media*, or common snipe; the *Gallinago media*, or *Scolopax gallinula*, Linn., the jack snipe; the *Scolopax sinensis*, or Chinese, or painted snipe; *Anas boschas*, the wild duck; the common, and the whistling teal; and a species of the *Phaeopus*, or whimbrel, complete the game of the peninsula.

There are two species of Bittern to be met with, viz. the *Ardea stellaris*, or *Botaurus stellaris*, the common bittern, and the *Botaurus lentiginosus*, or freckled bittern†; they are however both

\* I have not been able to identify this with any described species.—H. E. S.

† This must be an error, *B. lentiginosus* being an American species, occasionally straying into Britain, but unknown in Asia.—H. E. S.

rare birds. There is also the *Ardea flavicollis*, or yellow-necked heron.

A large and very elegantly-plumaged bird is the *Porphyrio viridis*, the *Ayam ayer*\* of the Malays, or the Malacca water-hen (syn. *Porphyrio hyacinthinus*, Temm.; *Gallinula porphyrio*, Lath.; *Fulica porphyrio*, Linn.). Body above green with a purple gloss, beneath violet. Bill, legs and front red†.

*Rallus philippensis*, the Philippine rail; the *Rallus phœnicurus*, or the red-tailed rail; the *Rallus striatus*, or streaked rail; and the *Plotus melanogaster*, or Javan darter, are also numbered amongst the birds of the peninsula. This last is to be met with in great numbers between Ching and Malim, five miles from Malacca, in the swampy ground, which for the greatest portion of the year is overflowed by the river. It is three feet three inches long, and obtains its name from the celerity with which it darts its long serpentine neck forward, in the act of seizing any of the finny tribe, on whom it preys. Its plumage is by no means destitute of elegance.

*Mergus*, the merganser, a plain and dusky-plumaged bird; *Coracias orientalis*, the oriental roller; the *Nectarinia longirostra*, or long-billed creeper; the *Certhia viridis*, or green creeper; the *Picus martius*, or greater black woodpecker; *Picus flavicans*, or yellow woodpecker; *Picus malaccensis*, or Malacca woodpecker; the *Picus galeatus*, or crested woodpecker; and *Picus minor*, or the lesser spotted woodpecker, may also be enumerated.

There are numerous varieties of Kingfishers: the *Alcedo collaris*, or collared kingfisher; the *Alcedo atricapilla*, or black-capped kingfisher; the *Alcedo smyrnensis*, var. 2, or Smyrna kingfisher; the *Alcedo tridactyla*, or three-toed kingfisher; a variety of the *Alcedo leucocephala*, or blue-headed kingfisher, differing in being blue, barred with black above; cheeks, nape, and orbits of the eyes chestnut; beneath pale rufous‡; a variety of the *Alcedo maculata*, or spotted kingfisher, differing in being brown, barred with black above; and the *Alcedo cristata*, or crested kingfisher.

There are three splendid species of the Barbet tribe, viz. the *Bucco javensis* of Horsfield, or the Javan barbet; the *Bucco versicolor* of Temm., or many-coloured barbet; and the *Bucco gularis* of Reinwardt, or blue-throated barbet. They are all three remarkable for splendour and brilliancy of plumage.

The *Ploceus philippinus*, Temm. (*Loxia major*, Linn.), or the Philippine weaver; and the *Ploceus pensilis*, Temm. (*Loxia pra-*

\* From *Ayama*, fowl, and *Ayer*, water.

† This appears to be identical, not with the *P. hyacinthus* of Europe, but with *P. indicus*, Horsf. (*P. smaragdinus*, Temm.), from Java.—H. E. S.

‡ The bird here described is the *Halcyon pulchellus* (*Dacelo pulchellus*, Horsf.).—H. E. S.

*sina*, Linn.), or pensile weaver, are both common in the peninsula, and the latter is remarkable for the elegance of its plumage. The nest of the former is composed of the fibres of leaves and grass, and is curiously constructed in the shape of a long cylinder, swelling out globosely in the centre, which portion forms the apartment wherein the eggs are laid. One end of the cylinder is attached to the end of a branch, which generally either impends over water, or is nearly inaccessible from some other cause; and the other, or lower extremity, is furnished with a small aperture, which forms the only entrance, and effectually secures the young from the depredations of the numerous snakes who would otherwise prey upon them.

There are several species of Flycatcher, amongst which may be enumerated the *Muscicapa atricapilla*, or pied flycatcher; the *Edolius malabaricus* of Temm., the *Lanius* of Shaw, or the Malabar shrike; and a new and beautiful species, as it appears to me, which I have ventured to term *Muscicapa cyanea*, or ultramarine flycatcher. Its body, head, wings and tail are velvet glossy black; front, crest, scapulars, back and tail-coverts are of a most beautiful and brilliant ultramarine blue. Tail shortish, cuneated. Legs and bill black. Length eight inches and a half. Female greenish ash; head, scapulars and tail-coverts sprinkled with ultramarine blue. Wings and tail brown, with a slight steel-blue gloss. These birds abound in the woods of Sebang, and the whole tribe enliven the solitude by their restless movements and noisy cries\*.

A variety of the *Coccyzus nævius* of Temm., or the brown cuckoo, is a denizen of the woods. It differs only in the tail having a black bar near the extremity and being tipped with white.

Few countries boast such a variety of the Pigeon tribe; the following species may be enumerated:—*Columba indica*, or green-winged pigeon; *Columba viridis*, or green turtle; *Columba malaccensis*, or Malacca turtle; *Columba turtur*, or turtle dove; *Columba vernans*, or green pigeon; *Columba ænea*, or nutmeg pigeon; *Columba cristata*, or lesser-crowned pigeon; *Columba migratoria*, or passenger pigeon; *Columba lacernulata*; *Columba striata*, barred turtle; and *Columba jambu*, or *Jambu* pigeon, which is a remarkably handsome bird with a blossom-coloured head of the hue of the *jambu* fruit, whence its name.

There are several species of Parrots indigenous to the peninsula, but the most beautiful varieties of lories and cockatoos are imported from Java and the Moluccas. The native ones are the *Psittacus galgulus*, or sapphire parrot, which suspends itself by

\* This is the *Irena puella*, Horsf.—H. E. S.

one foot when it sleeps; the *Psittacus purpuratus*, or purple-tailed parrot; and the *Psittacus erythrocephalus*, or blossom-headed parroquet.

The *Rupicola viridis* of Temm., or the *Calypomena* of Raffles, is distinguished by the vivid and glossy green of its plumage, heightened as it is by the contrast of three broad black bands. The *Trogon fasciatus*, or fasciated curucui; the *Paradisea regia*, or king bird of paradise\*; the *Nectarinia javanica*, or Javan humming-bird; and a very minute species, which I shall distinguish by the name of *Nectarinia ignita*, or fire-backed humming-bird. This beautiful little thing is only two inches long; cheeks black; chin and beneath white; crest, back and tail-coverts bright red; wings and tail black; lesser wing-coverts with a purplish gloss†. The *Oriolus galbula*, or golden oriole; the *Trogon sulphureus*, or sulphur curucui, differs only from the *Trogon sulphureus* of Spix in having the back glossy copper-coloured instead of glossy green‡; the *Lamprotornis gularis* of Temm., or *Paradisea gularis* of Lath., or golden-throated bird of paradise; the *Hirundo panayana*, or Panayan swallow; these, and several other species of the feathered creation, flash their splendid plumage in the sun, or make the deeply shaded woods re-echo with their song.

Of Chelonian reptiles, those found in the peninsula are the *Cistuda amboinensis*, or Amboina freshwater turtle; the *Chelonia mydas*, or green turtle, which is very abundant and esteemed a great delicacy; and the *Chelonia imbricata*, or hawk's-bill turtle, which is not so common.

Of the Saurian order, there is the *Alligator sclerops* of Cuvier; the *Alligator lacerta* of Linn., or the common alligator, which infests the rivers and sea-shores in great numbers, and may be seen occasionally swimming up and down the Straits at the distance of half a mile or more from the shore; the *Monitor elegans*, or elegant monitor lizard; the *Lacerta viridis*, or green lizard; the *Draco lineatus* (*D. volans*, Linn.), or flying dragon; the *Gecko guttatus*, or spotted gecko; and the *Gecko tuberculatus*, or the tokay, so called from the sound which it emits, and which must be familiar to the ears of every one who has sojourned in the Burman empire.

Of snakes, the following may be enumerated:—the *Coluber lebetinus*, which is exceedingly poisonous, and causes death by inducing an unconquerable sleep; the *Platurus laticaudatus* of Cuvier, or *Hydrus colubrinus*, a poisonous water-snake which is met with in the seas; these are the only poisonous ones which

\* This is probably an error, the *Paradisea regia* being a native of New Guinea.—H. E. S.

† This seems to be *Dicæum cruentatum*.—H. E. S.

‡ Probably *Harpuctes Reinwardti*, Temm.—H. E. S.

have passed under my observation. The *Coluber tigrinus*, or tiger-snake, is one of the most brilliant of the species, being striped like a tiger, as its name imports, and the head being beautifully variegated with yellow marks resembling Persian characters; and along the belly runs a chain of bright scarlet spots, every four being disposed in diamond squares; the *Coluber porphyriacus*; the *Coluber purpurascens*; the *Coluber maderensis*; the *Coluber schokari*; the *Coluber ahetula*, or whip-snake; the *Pseudoboa lineata* of Cuvier, or *Boa lineata* of Shaw; and the following three, which I could not class by means of 'Gmelin's System,' and which, from my not having 'Stark's Elements' at hand at the time of examination, and not having the specimens by me now, I am equally at a loss to arrange; viz. *Coluber* —; this snake is six feet long; plates of the belly 161; scales under the tail 59; pale yellowish brown; sides marked with equilateral triangular white spots placed equidistant from each other; inhabits the jungles of the peninsula. *Coluber* —; plates of the belly 184; scales under the tail 34; length three feet eight inches; body thick; above bluish black, beneath white; scales of the back hexangular with paler edges. *Coluber* —; plates of the belly 172; scales under the tail 125; two feet long, slender; tail one-third of the whole length, tapering; above brown ash, with a black stripe leading from the eye to the shoulder, a few minute bluish green specks intermingled with the stripe; a white stripe along each side, growing yellowish towards the head; beneath white, terminated on each side by a black filiform line. The *Anguis hepaticus* is also found in the woods.

The *Zygæna vulgaris*, or hammer-headed shark, is caught in great abundance and exposed in the markets, constituting the food of a large proportion of the lower orders; the *Pristis cirratus*, or cirrated saw-fish; several species of the *Sclerodermi* family, which are eaten by the natives, although their flesh is not in great esteem; the *Clupea chinensis*, or Indian sprat, and a great variety of others: those however most in esteem for European tables are the *Pleuronectes bilineatus*, or Indian sole; the black and white pomfret; the *Polynemus paradiseus*, or *Ikan kuru*; the seer fish, &c.,—all of which are remarkably fine.

Of shell-fish there are but few varieties, and of those the only edible ones are oysters\*, crabs, the common and the land, or violet, the cockle, and the muscle. The *Monoculus Cyclops*, which is a singular sea-insect, having a bivalve shell about a foot in diameter, is eaten by the lower orders. Prawns are in abundance.

The *Cancer Bernhardus*, or hermit-crab, is remarkable for its

\* Crabs of course belong to the crustaceous class of invertebral animals, as oysters do to the conchiferous class; but I introduce them here by the term shell-fish, as they are designated in common parlance.

habits. This little animal takes up its abode in any empty univalve shell, which continues to form its habitation until its increasing size renders it necessary for it to abandon it for a larger. It often happens that it fixes upon one already tenanted by another of its species, and a desperate struggle ensues, which is rarely discontinued until either one or both be disabled.

The few shells that are to be found on the beach in the Straits are small and common, such as the *Solen truncatus*, or truncated razor-sheath; the *Mya nicobarica*, or Nicobar trough-shell, or gaper; the *Venus decussata*, or decussated Venus; the *Murex tribulus*, or thorny woodcock; the *Murex rana*, or frog Murex; the *Mytilus plicatus*, or plaited muscle; the *Trochus indicus*, or Indian top; and *Voluta auris Midæ*, Midas's ear volute.

The entomology of the Straits presents a wide field for the naturalist, but several circumstances prevented my turning my attention to it. The few specimens that I had an opportunity of noticing are as follows:—the Atlas moth; the *Papilio memnon*, or Memnon butterfly; the *Papilio pamnon*, or Pamnon butterfly; the *Locusta citrifolia*, or lemon-leaved locust; the *Phyllium sic-cifolia*, or walking-leaf; the *Scarabæus rhinoceros*, or rhinoceros beetle; the *Libellula clavata*, or club-shaped dragon-fly; and the *Libellula tricolor*, or tricoloured dragon-fly.

L.—Description of some new Genera and Species of British Entomostraca. By W. BAIRD, M.D. &c.

[With a Plate.]

Legion BRANCHIOPODA.

Order LOPHYROPODA.

Section I. *Cladocera*.

IN the genus *Daphnia*, as elaborated by Milne Edwards in his 'History of the Crustacea,' there are two species which are so anomalous in their characters that it becomes necessary to separate them from the true *Daphniæ*, and even to form a distinct genus for each. These are the *D. cornuta* and the *D. rosea*. The latter I have already in a previous paper (Ann. Mag. Nat. Hist. xi. 87) given my reasons for removing from the genus *Daphnia*, and constituting for it the genus *Macrothrix*, and the former I have shortly characterized as a new genus in the 'Transactions of the Berwickshire Naturalists' Club' for 1845, p. 149.

The genus *Daphnia* of Müller was revised by Straus in the 'Mém. du Mus. d'Hist. Nat.' iv., and split into three genera, the generic characters being taken from the number of joints in the